



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework](#)

Standard of Learning (SOL) 3.4c Demonstrate fluency with multiplication facts of 0, 1, 2, 5, and 10



Student Strengths	Bridging Concepts	Standard of Learning
Students can skip count forward by twos, fives, and tens to 120, starting at various multiples of 2, 5, and 10	Students can determine products of multiplication facts of 0, 1, 2, 5, and 10 using a variety of strategies (i.e., skip counting, repeated addition, properties and patterns of multiplication, and arrays).	Students can demonstrate fluency with multiplication facts of 0, 1, 2, 5, and 10.

Understanding the Learning Trajectory

Big Ideas:

- Some basic multiplication facts can be found by breaking apart the unknown fact into known facts. Then the answers to the known facts are combined to give the final value ([Charles](#) pg. 22).
- There are patterns and relationships that exist in these facts and those relationships can be used to learn and retain the facts.
- By studying patterns and relationships, a foundation for fluency with multiplication facts and the corresponding division facts can be built.

[Math Strength Instructional Video 3.4c](#) ↗

Formative Assessment:

- [Just in Time Mathematics Quick Check 3.4c PDF](#)
- [Just in Time Mathematics Quick Check 3.4c Desmos](#)

Important Assessment Look Fors:

- Student uses a variety of strategies to solve facts (arrays, equal groups, skip counting, etc.).
- Student applies the identity property of multiplication that states that any number multiplied by 1 is that same number.
- Student applies the zero property of multiplication.

- Student uses the commutative property for multiplication when appropriate to do so.

Purposeful Questions:

- What strategy did you use to find the product of _____?
- How do you know _____ is the product of _____?
- Is there another fact that will help you with this one?
- What did you do to solve this problem?

Bridging Activity to Support Standard	Instructional Tips
Routine Choral Counting with 2, 5, 10	Choral counting is a quick and easy routine that will help reinforce the prerequisite skill of skip counting and will help students build fluency when solving multiplication facts with 2, 5, and 10. Here is an example of choral counting: Choral Counting Demonstration (YouTube) .
Rich Tasks Building Arrays Henrico County Public Schools	
Games/Tech Quick Draw Multiplication Mania from Theresa Wills Desmos 3.4c Polygraph: Multiplication Practice [Facts of 0, 1, 2, 5, and 10] Desmos 3.4c Sorting Out Basic Multiplication Facts	The game Quick Draw can be played with multiples of any number. Cards with the multiples of the chosen numbers must be made in advance. Directions on how to play the Multiplication Mania card game from Theresa Wills are here: Multiple Mania demo video. There is a video at the top of the linked web page with directions on how to take the Multiplication Mania game and implement it. This Custom Polygraph is designed to spark vocabulary-rich conversations about basic facts of 0, 1, 2, 5, and 10. Key vocabulary that may appear in student questions includes: factor, factors and product. In this activity, students will sort basic facts of 0, 1, 2, 5 and 10 based on their products.
Other Resources: • VDOE Mathematics Instructional Plans (MIPS): ◦ 3.4c - Multiplication Baseball (Word) / PDF Version • VDOE Word Wall Cards: Grade 3 (Word) and (PDF) Learning Trajectory Resources: Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. <i>Journal of Mathematics Education Leadership</i>, 7(3), NCSM. Clements, D. H., & Sarama, J. (2019). Learning and teaching with learning trajectories [LT]2. Marsico Institute, Morgridge College of Education, University of Denver. https://www.learningtrajectories.org/ Common Core Standards Writing Team. (2019). Progressions for the Common Core State Standards for Mathematics. Tucson, AZ: Institute for Mathematics and Education, University of Arizona.	

Richardson, K. (2012). How Children Learn Number Concepts: A Guide to Critical Learning Phases. Bellingham: Math Perspectives Teacher Development Center.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally*. (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - Standard of Learning Curriculum Framework (SOL)